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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/563,304	05/18/2006	Kazumi Kato	SON-3075	8365

23353 7590 09/13/2007
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WASHINGTON, DC 20036

EXAMINER

YAN, REN LUO

ART UNIT	PAPER NUMBER
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2854

MAIL DATE	DELIVERY MODE
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09/13/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/563,304

Applicant(s)

KATO ET AL.

Examiner

Ren L. Yan

Art Unit

2854

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 January 2006 and 09 January 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 1/4/2006.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Figures 1-3 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jaffa(5,503,067) in view of Hoffman, Jr. et al(6,142,070).

Jaffa teaches the structure of a screen printing apparatus as claimed in which a squeegee 12 mounted at an angle with respect to the sliding direction is slid on a screen to force a paste-like coating agent, supplied on said screen, to a substrate provided in contact with the underside of said screen, via an opening formed in said screen, said apparatus comprising at least one partitioning means 13 mounted substantially upright to a contact slide surface between said squeegee and said screen; and coating agent leakage prohibiting means 14a and 14b provided to both ends of said squeegee and having a coating agent control guide inclined relative to a normal

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line to the surface of said screen. See Figs. 1-9 in Jaffa for details. However, Jaffa does not teach to have the coating agent control guide inclined towards the center of a printing sphere as defined by a width of said squeegee, and does not teach to use of an elastic material. Hoffman teaches in a similar screen printing apparatus the conventional use of coating agent leakage prohibiting means 11 made of a unitary elastic material positioned at the two end of a squeegee and inclined towards the center of a printing sphere as defined by a width of the squeegee. See Figs. 1-8 and column 3, lines 40-52 in Hoffman for example. It would have been obvious to those having ordinary skill in the art at the time of invention to provide the squeegee of Jaffa with the coating agent leakage prohibiting means appropriately disposed as taught by Hoffman in order to better direct and retain the coating agent within the work area of a screen during printing operation.

With respect to claim 2, the recited coating agent being a cream solder and the substrate being a circuit substrate do not form any part of the screen printing apparatus as claimed. Since the applied prior art teach the exact structure of a screen printing apparatus and its squeegee with the partitioning means and coating agent leakage prohibiting means, it should be apparent to those skilled in the art that the screen printing apparatus of the applied prior art, especially the squeegee structure, is well capable of being used to print solder paste onto a circuit substrate with an appropriately designed screen pattern with a reasonable expectation of success. Accordingly, it would have been obvious to one of ordinary skill in the art to apply the screen printing apparatus of Jaffa, as modified by Hoffman to print solder paste onto circuit substrate to achieve the expected result of producing printed circuit boards.

Regarding claim 3, the combination of Jaffa and Hoffman teaches said squeegee and/or

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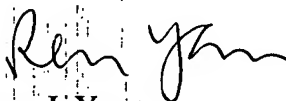
said coating agent control guide include curved surfaces facing said printing sphere with concave surfaces.

Regarding claim 4, the combination of Jaffa and Hoffman teaches said squeegee and/or said partitioning means is inclined at a preset angle relative to the sliding direction.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ren L. Yan whose telephone number is 571-272-2173. The examiner can normally be reached on 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on 571-272-2258. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Ren L Yan
Primary Examiner
Art Unit 2854

Ren Yan
Aug. 22, 2007